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Established 1868.

THE

CHALMERS-SPENCE CO.

MANUFACTURERS OF

Non-Conducting Coverings,



Asbestos Products,
Fire-Proof Materials.

THE CHALMERS-SPENCE CO.,

No. 1 South Water Street,

PHILADELPHIA, PA.

After October 1st, 1885, address us at 34 So. 2d Street.

THE CHALMERS-SPENCE CO.'S **ASBESTOS.**

AS A NON-CONDUCTOR OF HEAT.—The practice of applying non-conducting coverings on steam and other heated surfaces to prevent the radiation of heat is now universal. No enlightened engineer questions the desirability of such practice or doubts the saving of fuel as a result. On the contrary, he endeavors to procure for his use the best Covering he can obtain and that his employer will pay for. On examining the many kinds of non-conducting materials in the market, we find that Coverings may be divided into two classes; the *Composition* or *Plastic* Coverings and the *Felt* or *Fabric* Coverings. Which, of the many offered, may be the best, is a matter of great diversity of opinion. It involves the question of *cheapness*, *durability* and *efficiency*. We dispose of the question of cheapness by the assertion that, within a reasonable limit of cost, a cheap Covering is one that possesses durability and efficiency in a high degree. The durability of **Asbestos** under the most intense radiated heat, is a matter of fact and not opinion. Its long mineral fibres remain quite unaffected by intense heat and chemical or mechanical action. No other known fibre, useful in the manufacture of Coverings, possesses these

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qualities. Any Covering, then, having a large proportion of pure *Asbestos Fibre* must, if properly constructed, have a high degree of durability. All the higher grades of Covering made by us contain from 25 to 100 per cent. of pure *Asbestos*, and are the most durable goods of the kind known. In the matter of *durability*, therefore, *Asbestos* stands unrivalled. In the matter of *efficiency*, there are various and conflicting opinions. This is chiefly because many people have been misled by so-called experts, who decide upon the merits of various coverings after a few weeks' trial, praising the most efficient regardless of durability. Manifestly a covering that shows a high degree of efficiency but burns out or goes to pieces in a year or so is not a desirable covering. Leaving out of the question then, all materials containing organic or perishable substances, we find on examining composition coverings that those constructed of infusorial earths show less radiation of heat than any other *plastic* materials; but they have very little structural strength. Of the felt coverings it is also known that fibres felted so as to hold air in the interstices form better non-conductors of heat than any other *fabrics*. Hair felt, for instance, is a superior non-conductor; but it perishes under a moderate heat. With these facts in view, we are manufacturing a composition in which *infusorial earth*, giving high non-conducting powers, is combined with *Asbestos Fibre*, giving great structural strength and durability. We call it our **PATENT INFUSORIAL SILICATE COMPOSITION**. For a *Felt* or *Fabric* Covering, we manufacture our **PATENT REMOVABLE COVERING**, in which pure *Asbestos Fibre* in felted form is placed between confining walls of the same material. In this we obtain the air-confining and heat-resisting structure of hair felt in the lasting and heat-enduring form of *Asbestos*.

ASBESTOS AS A STEAM PACKING.—Our Steam Packing made from this mineral appeals at once to the judgment of engineers. The long fibres are braided into the various forms of cotton or hemp *piston* and *valve packings*, and the same elasticity and compactness is obtained, but with greater durability. The *millboard* and *sheathing* for flat joints is cheaper and more lasting than rubber or any other composition that is used. *Asbestos* does not burn or char under the heat of superheated steam and is not affected by acids.

ASBESTOS AS A FIRE-PROOF MATERIAL.—The unflammable qualities of *Asbestos* render it a useful lining for any fire-exposed portions of buildings or vessels. It is cheaper than iron and just as serviceable.

ASBESTOS IN THE MECHANICAL ARTS.—It is impossible to enumerate the many uses to which *Asbestos* is put. Metal-workers, glass-makers, chemists and others find it useful in moulding, soldering and handling their goods, and an improvement over old methods. We solicit correspondence with parties having heated materials to handle as we feel sure we can offer them goods that will be of value.

Address all communications to

THE CHALMERS-SPENCE CO.

THE CHALMERS-SPENCE COMPANY'S

Patent "Air-Space" Covering,

AND

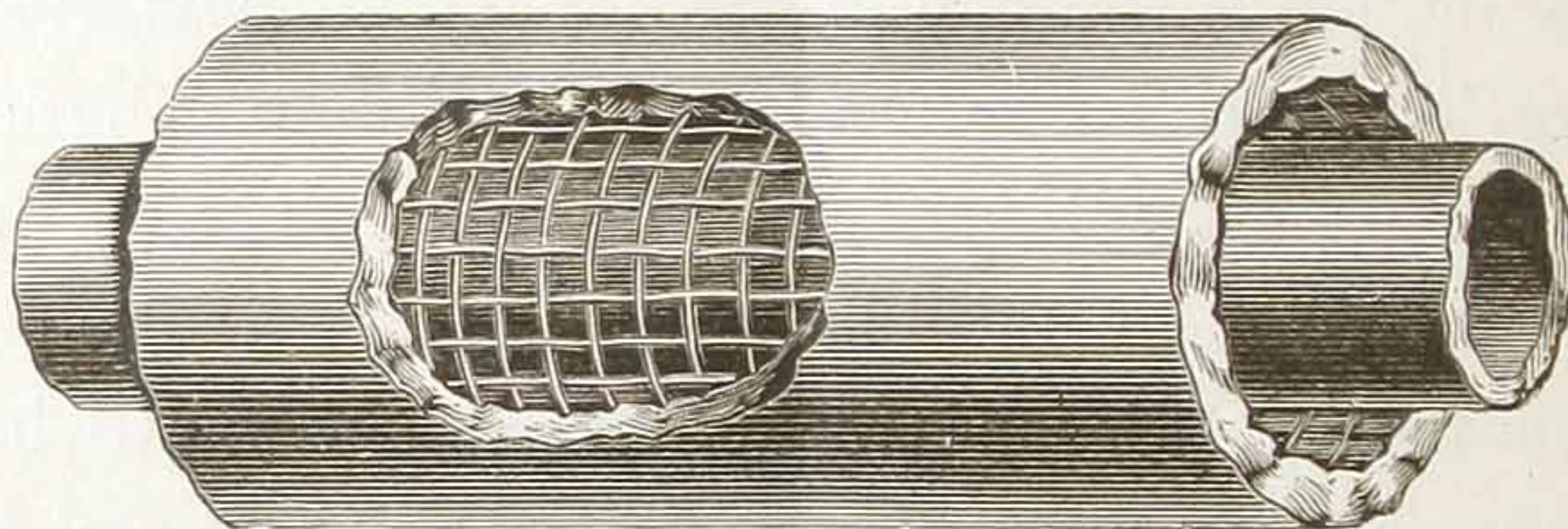
NON-CONDUCTING COMPOSITIONS.

We have been manufacturing NON-CONDUCTING COMPOSITIONS for 18 years, and their merits are well known.

We have now placed on the market a new patent composition made of INFUSORIAL SILICATE, which we claim is superior to all other compositions in lightness, non-conducting qualities and durability. It is absolutely non-combustible. The only binding fibre used is pure ASBESTOS.

We obtain the best result by applying our composition with THE PATENT "AIR SPACE," which consists in forming a raised frame work around the boiler or pipe as shown in cut.

On this frame work we apply our PATENT COMPOSITION in successive coats. The composition keys itself through the meshes of the frame work giving it a firm and durable hold. A strong, light covering is thus obtained far more efficient than solid covering and more easily repaired.



THE PATENT "AIR-SPACE" COVERING.

Confined air has long been regarded by scientific and practical men as one of the best non-conductors of heat. Our application of this principle to coverings has received the endorsement of many leading firms and corporations in the United States, after thorough examinations of our methods and numerous competitive tests with the goods of other makers.

For hot blast pipes and flues this method of covering stands without an equal.

We also apply our PATENT COMPOSITIONS directly to the iron in any thickness with excellent results.

We send our Agents to all points to show samples and furnish estimates for work.

To parties wishing to apply materials themselves, we furnish our PATENT COMPOSITION in barrels, all ready to apply.

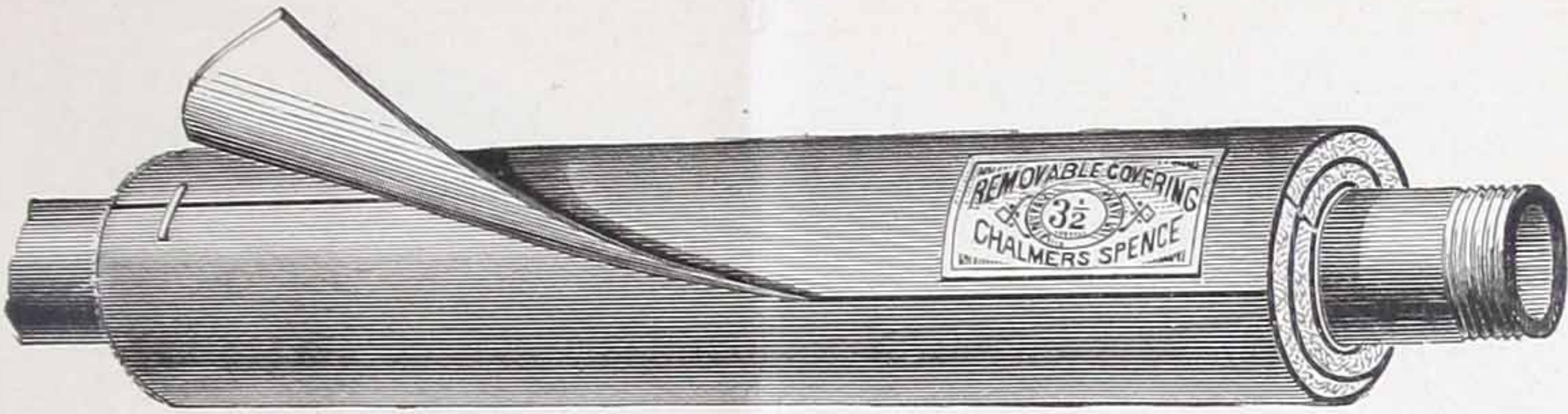
Price per Bbl. for Steam Work	\$5.00
" " for Hot Blast Work	\$6.00

Special Discounts for quantities.

One barrel covers thirty square feet one inch thick.

THE CHALMERS-SPENCE COMPANY'S

Patent Removable Coverings.



We are manufacturing several varieties of PATENT REMOVABLE COVERINGS, adapted to meet every possible want in that line.

This Covering is made in sections of three feet each in length, and of size to fit any diameter of pipe.

Each section is cut longitudinally on one side, and will easily slip on the pipe.

The joint is held together by staples and covered with the flap which is secured by paste. (As shown in cut).

This covering is ready made, and involves no loss of time or waste of materials in applying.

Any one can put it on, and a handy mechanic can make a neat and durable job with little or no trouble.

This is an important consideration to those far distant from large cities, who must of necessity apply the Covering themselves.

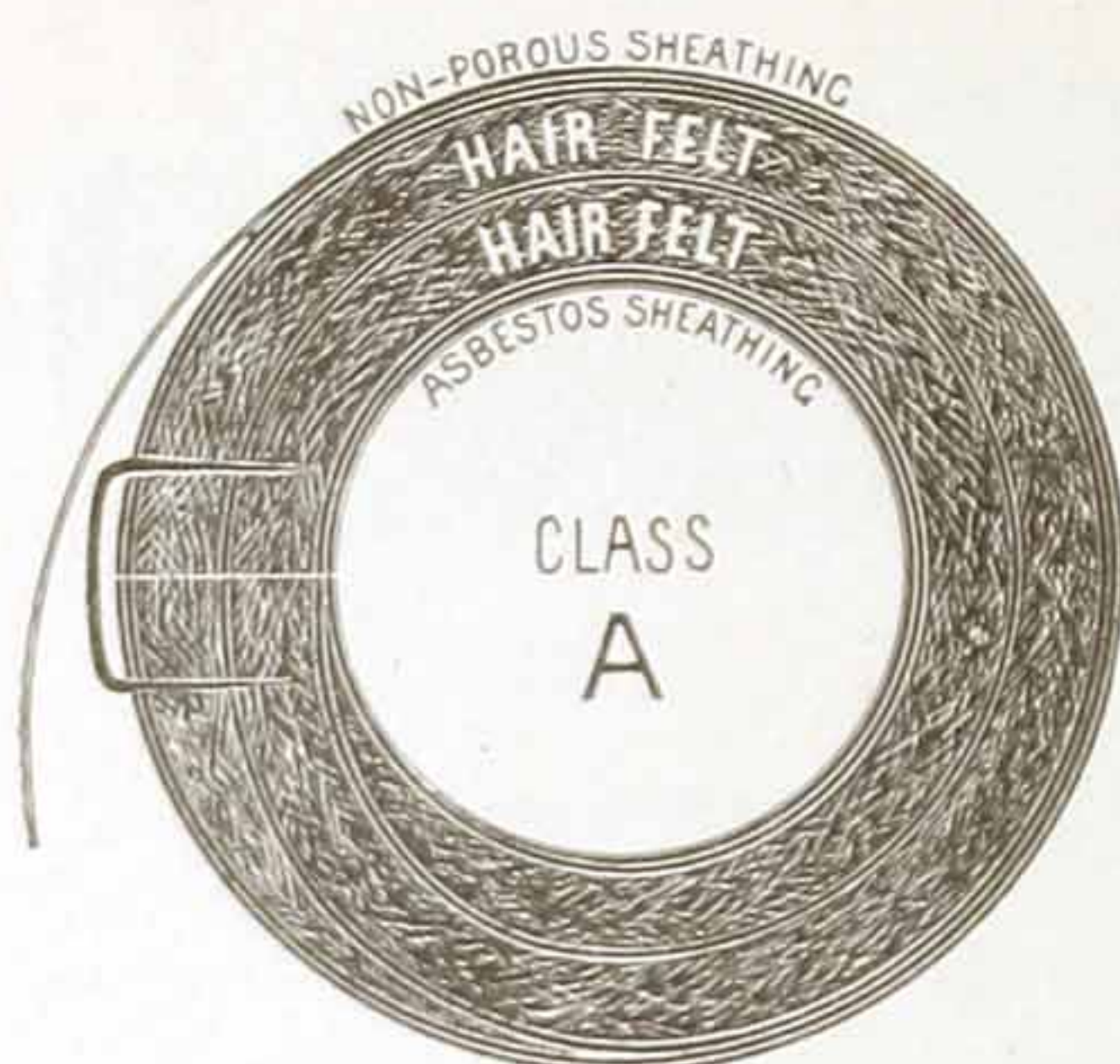
We manufacture this Covering with great care, using pure and specially selected materials.

It is the best non-conductor of heat of its kind known. It is light in weight, and will not sag or strain the pipes. It will not crack or break under jar or vibration.

The use of Asbestos Fibre as a filling, in place of hair felt or other perishable materials, is a new and important feature. Since our introducing it in these Coverings it has met with universal favor. Hair felt will in time char and become worthless, while Fibrous Asbestos retains its form and high non-conducting powers under long continued and intense heat.

THE CHALMERS-SPENCE COMPANY'S

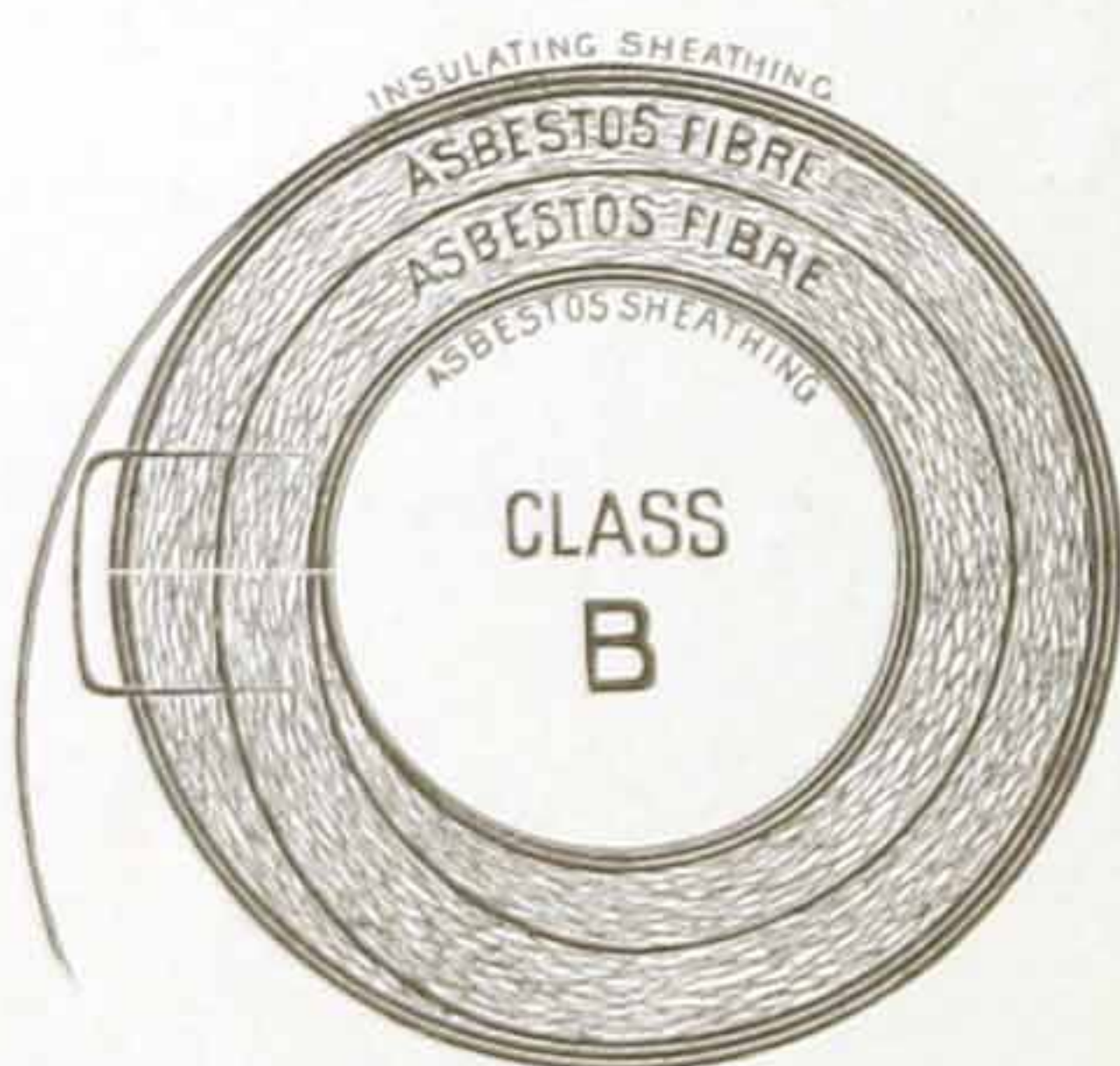
PATENT REMOVABLE COVERINGS.



CLASS A.—For all work where hair felt is used.

Made of two layers best quality Hair Felt between double layers of non-porous Sheathing and an inner layer of Asbestos.—At 1 inch in thickness it is as good a non-conductor of heat as $1\frac{1}{2}$ inches of hair felt.

For price, refer to List A, 8th page.

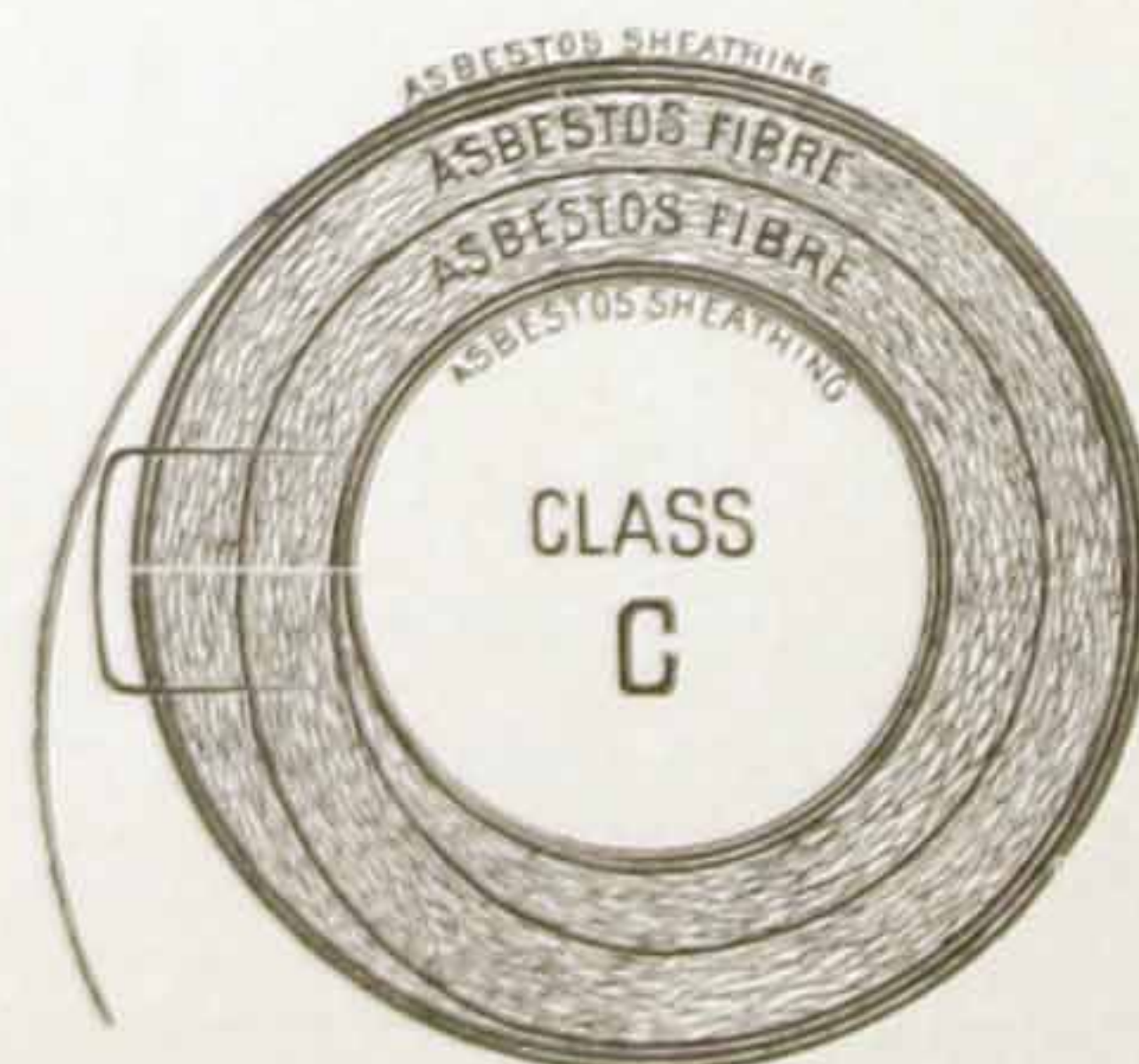


CLASS B.—For all ordinary steam work, made of two layers of fibrous Asbestos, secured between heavy layers of insulating sheathing.

The Asbestos is indestructible under heat, and in its fibrous form is an excellent non-conductor of heat.

This is a very durable Covering, and we sell it at same price as that filled with felt.

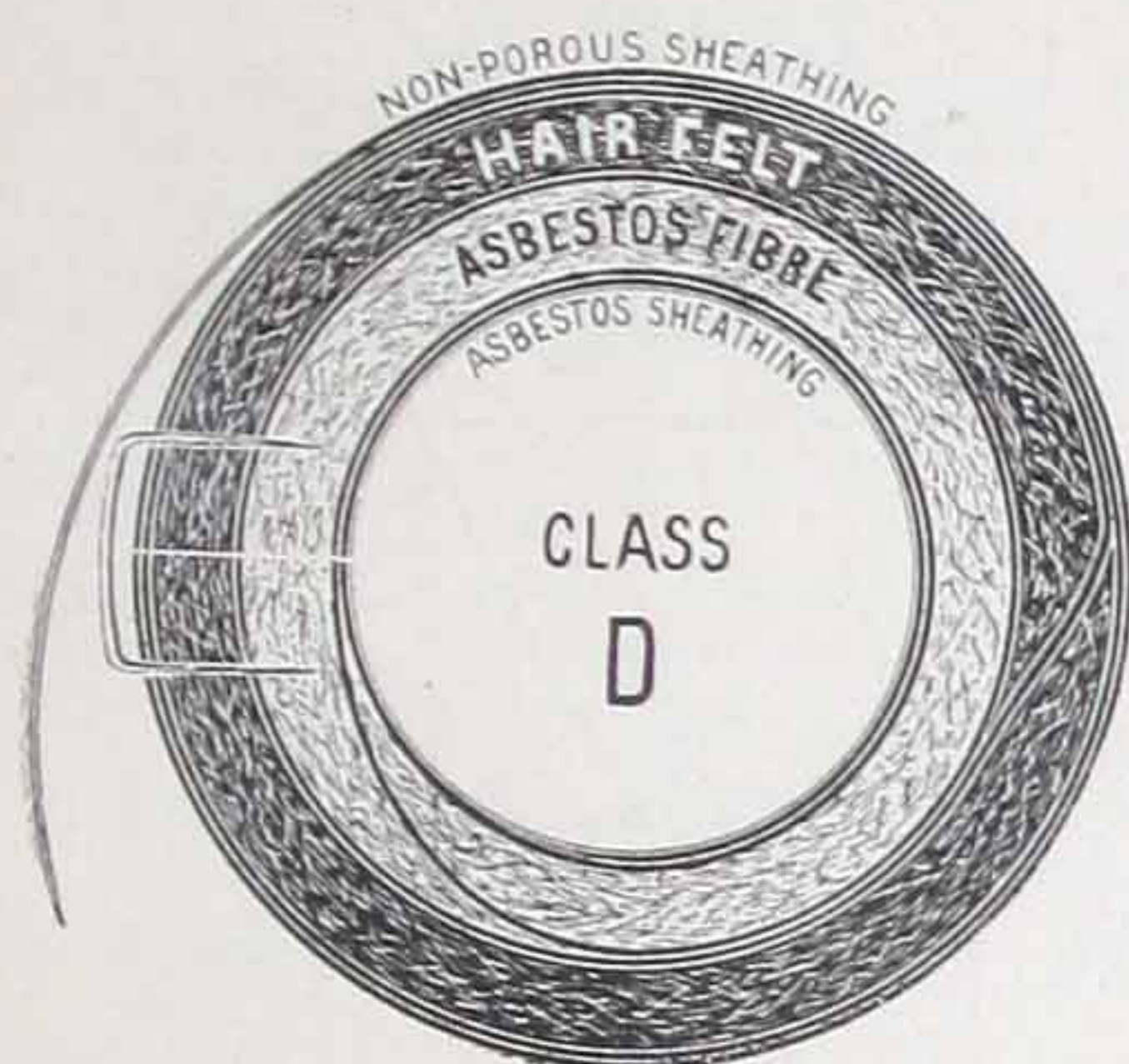
For price, refer to List A, 8th page.



CLASS C.—For super-heated steam and hot-air pipes, made entirely of pure Asbestos. The filling is of Asbestos fibre and the partitions are of Asbestos sheathing. It can not burn under any heat used in the arts. It is an excellent non-conductor of heat, and is the most durable all-mineral sectional covering known.

For price, refer to List C, 8th page.

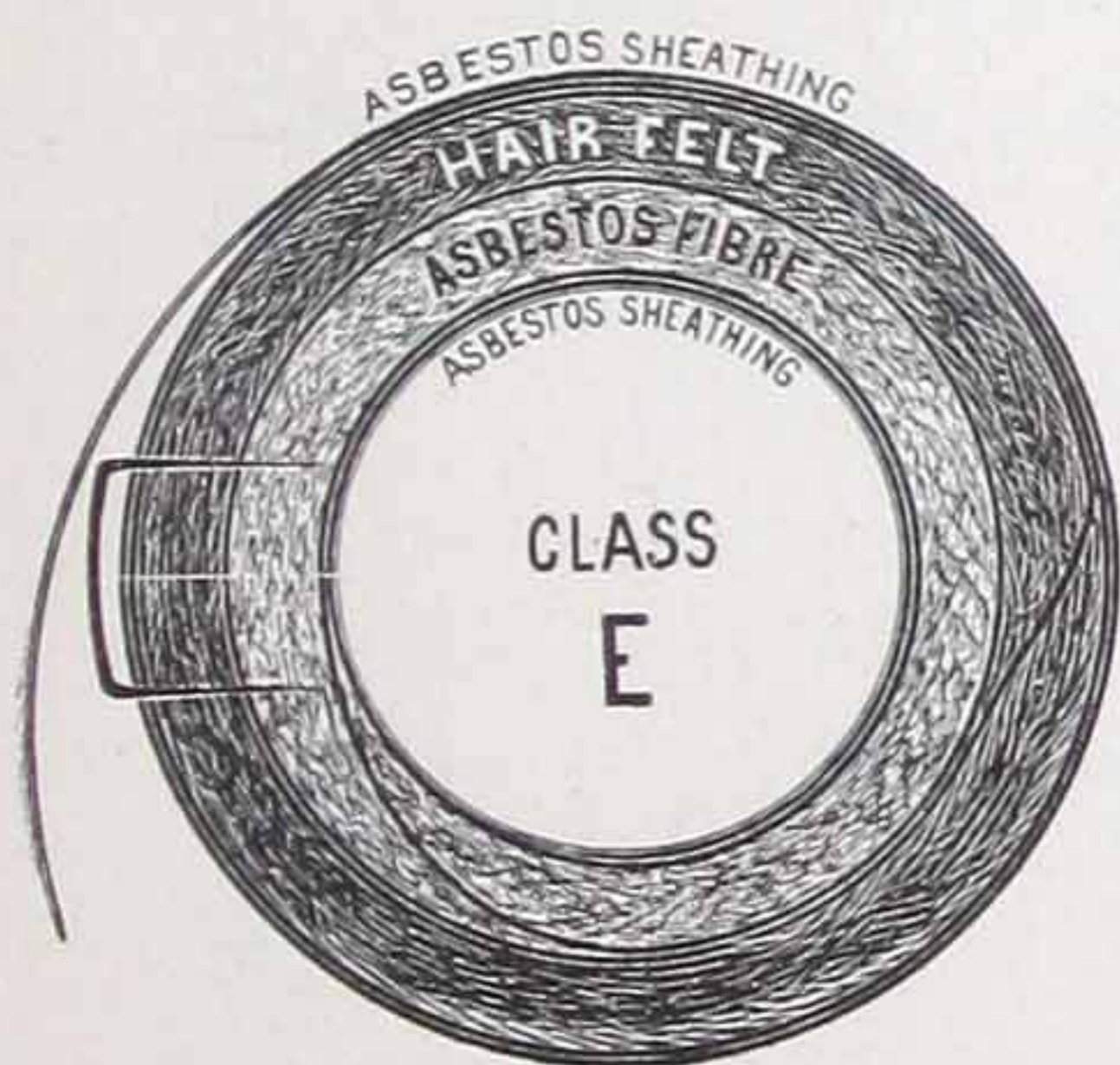
THE CHALMERS-SPENCE COMPANY'S
PATENT REMOVABLE COVERINGS.



CLASS D.—For any steam work, especially high pressure. The unexcelled non-conducting properties of hair felt, and the indestructibility of Asbestos is conceded by all. This Covering is a combination of these materials. The inner layer is of Asbestos fibre, and the outer layer is of hair felt. This insures a high degree of efficiency as well as great durability.

These layers are enclosed between double walls of non-porous sheathing.

For price, refer to List A, 8th page.



CLASS E.—In this Covering we use the same filling as in class D, *i. e.*, one layer of Asbestos fibre and an outer layer of hair felt, but make the case or wrapper of Asbestos Sheathing, rendering it strictly fireproof inside and out.

For price, refer to List C, 8th page.

When ordering please state particularly which CLASS you wish us to send. Also advise whether measure of size of pipes is taken from outside or inside diameter. Give shipping marks and route by which goods are to be sent.

We apply these Coverings on the pipes at any point. Send us measurements and we will make a proposition for your work.

Samples mailed when requested.

THE CHALMERS-SPENCE COMPANY'S

Price List of Patent Removable Coverings.

LIST A. For Classes A, B & D.			LIST C. For Classes C & E.		
Inside Diameter of Pipe.	Outside Diam'r of Pipe.	Price per lineal ft. of Covering.	Inside Diameter of Pipe.	Outside Diam'r of Pipe.	Price per lineal ft. of Covering.
$\frac{1}{2}$ in.	$\frac{7}{8}$ in.	15 cts.	$\frac{1}{2}$ in.	$\frac{7}{8}$ in.	19 cts.
$\frac{3}{4}$	$1\frac{1}{8}$	16	$\frac{3}{4}$	$1\frac{1}{8}$	20
1	$1\frac{3}{8}$	17	1	$1\frac{3}{8}$	21
$1\frac{1}{4}$	$1\frac{5}{8}$	19	$1\frac{1}{4}$	$1\frac{5}{8}$	24
$1\frac{1}{2}$	$1\frac{7}{8}$	20	$1\frac{1}{2}$	$1\frac{7}{8}$	25
2	$2\frac{3}{8}$	22	2	$2\frac{3}{8}$	27
$2\frac{1}{2}$	$2\frac{7}{8}$	25	$2\frac{1}{2}$	$2\frac{7}{8}$	31
3	$3\frac{1}{2}$	29	3	$3\frac{1}{2}$	36
$3\frac{1}{2}$	4	32	$3\frac{1}{2}$	4	40
4	$4\frac{1}{2}$	34	4	$4\frac{1}{2}$	42
$4\frac{1}{2}$	5	37	$4\frac{1}{2}$	5	46
5	$5\frac{1}{2}$	40	5	$5\frac{1}{2}$	50
6	$6\frac{5}{8}$	45	6	$6\frac{5}{8}$	56
7	$7\frac{5}{8}$	51	7	$7\frac{5}{8}$	64
8	$8\frac{5}{8}$	55	8	$8\frac{5}{8}$	69
9	$9\frac{5}{8}$	61	9	$9\frac{5}{8}$	76
10	$10\frac{3}{4}$	67	10	$10\frac{3}{4}$	84
12	13	78	12	13	97

Special Sizes at proportionate Prices.

DIRECTIONS FOR APPLYING.

1. Make paste of good wheaten Flour and rather thick.
2. Moisten flap of covering with water until it is pliable and coat the inner side with paste.
3. Open a section of covering at one end with both hands, and slip it over the pipe to be covered. Draw edges snugly together and paste flap firmly in position. On large sizes, use a strap or rope with noose.
4. Place the next section on pipe and drive the abutting joints snugly together.
5. Paste the strips with brush and wrap one layer around each abutting joint.
6. The staples sent with each shipment are for use **only** when the position of pipe prevents the section staying in place through the use of paste alone.

THE CHALMERS-SPENCE COMPANY'S

ASBESTOS MATERIALS.

We are first hands in Asbestos, being miners and manufacturers. The long silky and indestructible fibres of Asbestos make it a very valuable article for steam packing. These fibres are readily spun and braided into the various forms of piston and valve packings, and are quite unaffected by heat or acid. Piston and valve packings should be well lubricated before using.

We also make Asbestos Mill Board, for packing cylinder heads, steam chests and all flange joints.

Rub the mill board with plumbago or other lubricant, and the gaskets can be used over and over again. If surfaces are well planed use very thin board. Many persons select board that is too thick for the purpose and do not get satisfactory results. Much unjust prejudice against Asbestos exists because of its misuse.

Asbestos Sheathing is largely used in the construction of non-conducting Coverings and as a fire-proof building paper. It has many other special uses too numerous to enumerate.

ASBESTOS MILL BOARD.....per lb. 20 cents.

$\frac{1}{8}$ to 2 inches thick, Sheets 42x44 inches.

ASBESTOS BRAIDED PACKING.....per lb. 50 cents.

In Coils 25 lbs.

ASBESTOS LUBRICATED PACKING.....per lb. 45 cents.

In Coils 25 lbs.

ASBESTOS WICK.....per lb. 50 cents.

Cases 25 and 50 lbs. in $\frac{1}{4}$ and $\frac{1}{2}$ lb. Reels.

ASBESTOS SHEATHING.....per lb. 15 cents.

1, 2, 3 and 4 ply thick, Rolls 36 inches wide.

ASBESTOS FIBRE, No. 1.....per lb. 15 cents.

“ 2.....per lb. 10 cents.

ASBESTOS CLOTH (Pure), 25 inches wide.....per yard, \$.200.

Special Widths to order.

ASBESTOS GASKETS...per lb. 50 cents.

Cut to order any size.

ASBESTOS YARN OR CORD, (Pure).....per lb. \$1.00.

Special Asbestos Goods made to order.

THE CHALMERS-SPENCE COMPANY'S

HAIR FELT AND CANVAS.

We do not confine ourselves to our specialties, but aim to give customers any style of Covering they desire. We are prepared to contract for Hair Felt and Canvas, applied on pipes at any point. We will furnish same, single or double layers, lined with Asbestos, or our Patent Non-Conducting Composition, or any special combination required.

Refrigerator, Ice House and Water Pipe Coverings a specialty. Write for full information.

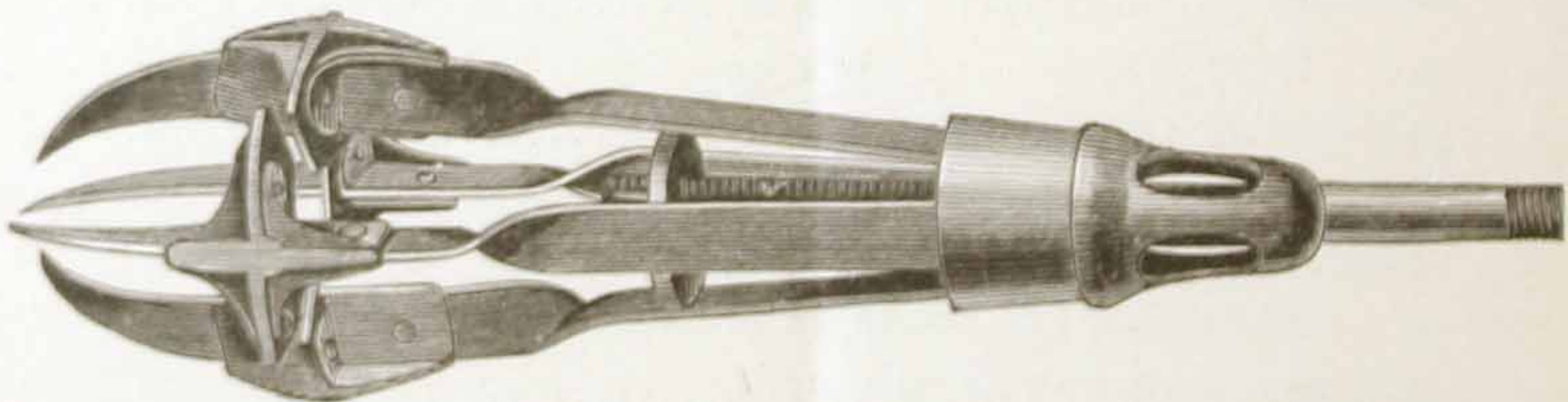
We also furnish the materials for the work F. O. B.

$\frac{1}{2}$ inch	Hair Felt, in bales	300 sq. ft.	@	$5\frac{1}{2}$ cents	sq. ft.
$\frac{3}{4}$ inch	"	300 "	@	$6\frac{1}{4}$	"
1 inch	"	300 "	@	7	"

Canvas Duck, 40 inches wide, @ 30 cents per yard.

Sheathing, Twine, Wax, &c., at market rates.

THE NATIONAL STEEL TUBE CLEANER



For cleaning boiler tubes. The working parts of this Cleaner, manufactured by us, are all of the best quality of steel. The scrapers have a sharp steel edge that does good work, and cannot dull. It is adjustable, and fits exactly the inside of the tube. It will clean better, last longer, and work easier than any cleaner in the market. It saves its cost every time it is used.

$1\frac{1}{2}$ in.	\$2.00	$2\frac{1}{2}$ in.	\$2.75	$4\frac{1}{2}$ in.	\$4.50
$1\frac{3}{4}$ in.	2.00	3 in.	3.00	5 in.	5.00
2 in.	2.00	$3\frac{1}{4}$ in.	3.25	$5\frac{1}{2}$ in.	5.50
$2\frac{1}{4}$ in.	2.25	$3\frac{3}{4}$ in.	3.50		
$2\frac{3}{4}$ in.	2.50	4 in.	4.00		

THE CHALMERS-SPENCE COMPANY'S

FIRE - PROOF MATERIALS.

We have had a long experience in manufacturing material to stand intense heat. Architects, builders and others will do well to consult with us when wishing to fire-proof any exposed part of their work. We can give better results, at less cost, than by using many methods now resorted to.

We make a specialty of protecting the floors, walls and ceilings of boiler and furnace rooms, bulkheads of vessels, &c. We also furnish fire-proof curtains and scenery for theatres. Write for full information.

AMERICAN ACADEMY OF MUSIC,

PHILADELPHIA, June, 1885.

D. T. DICKSON, Esq.

Manager of THE CHALMERS-SPENCE CO.

No. 1 South Water St., Phila.

Dear Sir:—The Curtain now in use in this building made of Asbestos Cloth, (ninety-seven per cent. Asbestos and three per cent. cotton), furnished by you is, we believe, the only complete barrier of protection to an audience in case of fire, *in the world*.

The sewing, (the Asbestos Board and Wire Gauze, also sent from your Company), has been done by you in a workmanlike manner giving perfect satisfaction to the underwriters and ourselves.

It is with much satisfaction that these sentences are written in full appreciation of your labors to perfect this Curtain, and with full permission to refer any inquirers for further information to us.

I am, yours, very respectfully,

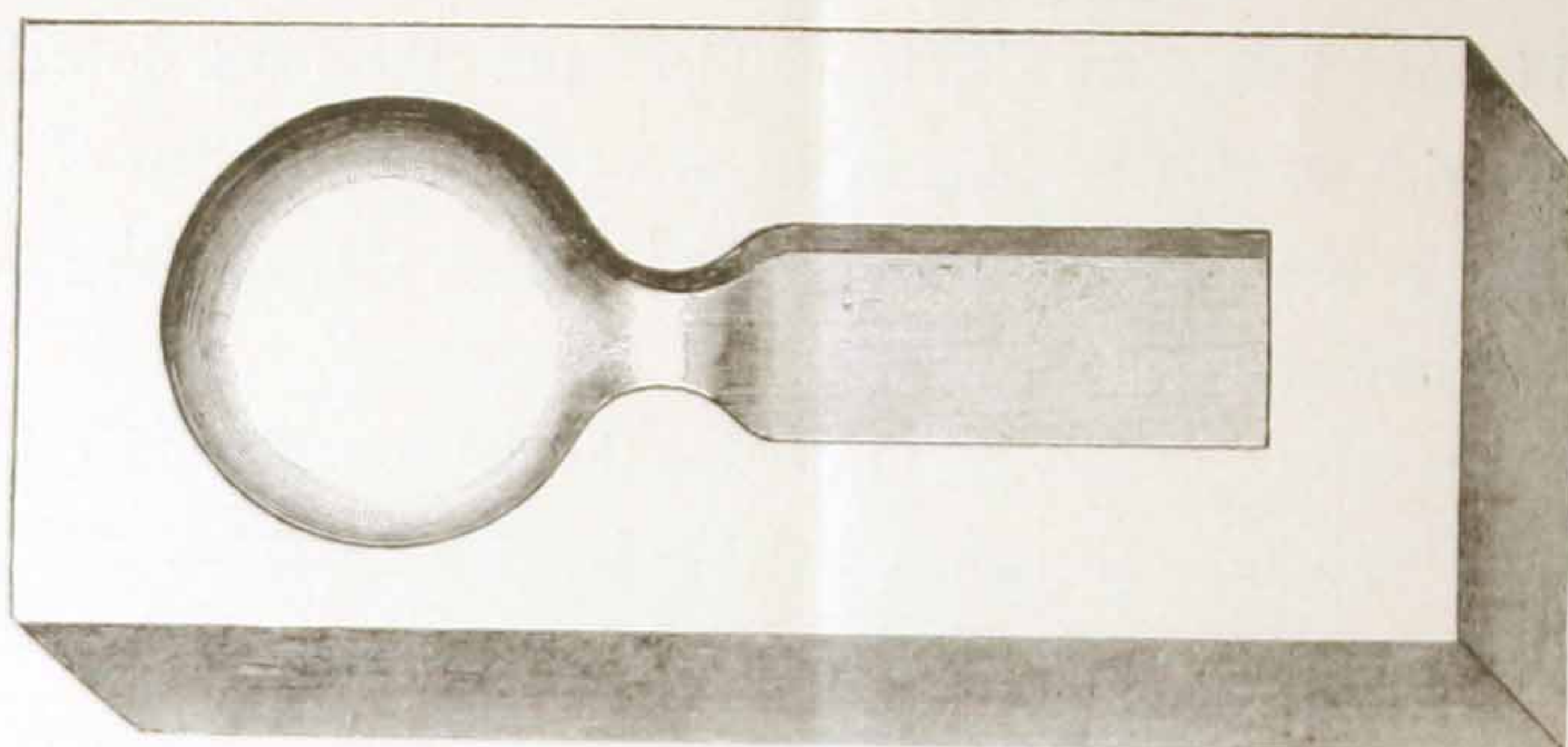
(Signed) ALFRED G. BAKER,

President Academy of Music.

The above testimonial was given us on completion of a large fire-proofing contract for the Philadelphia Academy of Music. These Curtains can be made from pure cloth containing 100 per cent. of Asbestos.

THE CHALMERS-SPENCE COMPANY'S

Asbestos Soldering, Melting and Ingot Blocks.



SOMETHING NEW FOR JEWELERS.

The above cut represents a solid Asbestos Block for melting jewelers' metals and for soldering jewelry, &c. It is as light and porous as charcoal, and will reflect heat as readily as that material. It cannot burn under the most intense heat, and does not even lose its shape. It is provided with a bowl in which to melt the metal, also a mould in which to form the ingot. Binding wires are easily inserted in any direction by using a very slight pressure. Small objects for soldering are thus easily secured to the block and can be conveniently held in the hand at any desired distance from the blow pipe. The high non-conducting powers of the block prevents the transmission of any heat to the hand even if held a long while. The same block may be used for this purpose over and over again.

This block is not made in layers, and will not flake up under heat like mill-board. It is a homogeneous body of porous Asbestos. Leading jewelers have tried it and like it.

6in. x 3in. Sample by mail, 40 cents. Per doz., \$4.00.

THE CHALMERS-SPENCE CO.'S

LIST OF PROMINENT PATRONS.

Ocean Steam Ship Co.....	New York.
New York and Cuba Mail Steam Ship Co.....	New York.
Pacific Mail Steam Ship Co.....	New York.
Clyde Coastwise Lines	New York and Philadelphia.
Schuyler Towing Line	New York and Albany.
Academy of Music.....	Philadelphia.
East River Bridge	New York and Brooklyn.
United States Custom House and P. O.....	Philadelphia.
McKean, Borie & Co., Sugar Refinery.	Philadelphia.
Delaware River Iron and Ship Building Works.....	Chester, Pa.
Quintard Iron Works	New York.
J. A. Roebling's Sons Co.....	Trenton.
Pennsylvania Steel Works	Steelton, Pa.
E. & G. Brooke & Co.....	Bethlehem, Pa.
Bethlehem Iron Co.....	Bethlehem, Pa.
Susquehanna Coal Co.....	Nanticoke, Pa.
Cambria Iron Co.....	Johnstown, Pa.
Riverside Iron Co.....	Wheeling, W. Va.
Edgar Thomson Steel Co. (Carnegie Bros.).....	Pittsburgh, Pa.
Lackawanna Iron and Coal Co	Scranton, Pa.
Bates & Johnson.....	New York.
Frederick Tudor.....	New York.
Morton, Reed & Co	Baltimore.
Wm. Bingham & Co.....	Cleveland, O.
Hay & Prentice	Chicago, Ill.
Fraser & Chalmers.....	Chicago, Ill.
Hendrie & Bolthoff Manufacturing Co.....	Denver, Col.
N. O. Nelson Manufacturing Co.....	St. Louis, Mo.
Lonsdale Co.	Lonsdale, R. I.
Whittenton Manufacturing Co	Taunton, Mass.
Continental Sugar Refinery.....	Boston, Mass.
Jenkins Bros.....	Boston, Mass.

THE CHALMERS-SPENCE CO.'S OFFICES:

419-421, 8th Street, E. R., NEW YORK.

144 and 146 E. Lake Street, CHICAGO, ILL.

23 Weybosset Street, PROVIDENCE, R. I.

36 Lewis Block, PITTSBURGH, PA.

No. 1 South Water Street,
PHILADELPHIA, PA.